



2002 Behavioral Risk Factor Survey



**Health Risk Behaviors
in the State of Michigan**



www.michigan.gov/mdch



2002 Behavioral Risk Factor Survey

**Health Risk Behaviors
in the State of Michigan**

[*www.michigan.gov/mdch*](http://www.michigan.gov/mdch)

Printed 2003

Permission is granted for the reproduction of this publication provided that the reproductions contain appropriate reference to the source.

This project was financed in part through a cooperative agreement (U58/CCU501994) from the U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. The opinions, findings, and conclusions expressed in this publication do not necessarily reflect the opinions or policies of the federal Centers for Disease Control and Prevention.



Department of
Community Health

JENNIFER M. GRANHOLM

Governor, State of Michigan

JANET D. OLSZEWSKI

Director, Michigan Department of Community Health

JEAN C. CHABUT, BSN MPH

Chief Administrative Officer

Public Health Administration

Michigan Department of Community Health

MATTHEW L. BOULTON, MD MPH

Director, Bureau of Epidemiology

Michigan Department of Community Health

CORINNE E. MILLER, DDS PHD

Director, Epidemiology Services Division

Michigan Department of Community Health

SUSAN R. BOHM, MS

ANN P. RAFFERTY, PHD

HARRY B. MCGEE, MPH

Authors, Epidemiology Services Division

Michigan Department of Community Health

Acknowledgements

Data were collected for the 2002 Michigan Behavioral Risk Factor Survey by the Institute for Public Policy and Social Research, Office for Survey Research, at Michigan State University. The authors are grateful to Larry Hembroff, PhD, and his staff for their participation in this effort.

We also acknowledge the assistance provided by the Behavioral Surveillance Branch at the federal Centers for Disease Control and Prevention in Atlanta, Georgia.

We are especially grateful to the residents of Michigan who agreed to participate in this survey.



Table of Contents

| | |
|---|-----|
| Acknowledgements | .iv |
| BRFS Summary | .vi |
| Health Care Coverage | .1 |
| Health Status | .2 |
| Fruit & Vegetable Consumption | .3 |
| Cardiovascular Disease | .4 |
| Diabetes | .5 |
| Leisure-Time Physical Activity | .6 |
| Occupational Physical Activity | .7 |
| Weight Status | .8 |
| Smoking | .9 |
| Oral Health | .10 |
| Immunizations Among Adults 65 Years and Older | .11 |
| Asthma | .12 |
| Alcohol Abuse | .13 |
| HIV Testing | .14 |
| Colorectal Cancer Screening | .15 |
| Prostate Cancer Screening | .16 |
| Cervical Cancer Screening | .17 |
| Breast Cancer Screening | .18 |
| Firearms | .19 |
| BRFSS Methods | .20 |
| Bibliography | .21 |

Behavioral Risk Factor Survey Summary Michigan 2002

This report presents estimates from the 2002 Michigan Behavioral Risk Factor Survey (BRFS). The BRFS is a statewide telephone survey of Michigan residents, aged 18 years and older. This survey is the only source of state-specific, population-based estimates of the prevalence of various behaviors, medical conditions, and preventive health care practices among Michigan adults.

All results from the 2002 Michigan BRFS presented in this report have been weighted as described in the Methods section and can be interpreted as estimates of the prevalence rates of various health risks among the general adult population of Michigan.

| Selected Risk Factors | Michigan Estimates (%) | National Estimates (%) | | |
|--|---------------------------|------------------------|--------|------|
| | | Low | Median | High |
| No health care coverage (≥ 18 yrs) | 12.0 | 6.8 | 14.1 | 31.0 |
| General health fair or poor | 13.5 | 10.4 | 14.8 | 33.0 |
| Ever told diabetes | 8.1 | 3.5 | 6.7 | 10.5 |
| No leisure-time physical activity in past month | 24.3 | 15.0 | 24.4 | 46.8 |
| Obese (BMI ≥ 30) | 25.2 | 16.5 | 22.1 | 27.5 |
| Current smoking | 24.1 | 9.4 | 23.0 | 32.6 |
| Binge drinking | 16.8 | 7.9 | 16.1 | 24.8 |
| No dental visit in past year | 23.9 | 19.8 | 30.8 | 45.8 |
| Ever told asthma | 13.0 | 8.6 | 11.8 | 19.6 |
| Never had home blood stool test (≥ 50 yrs) | 46.4 | 40.4 | 55.1 | 99.1 |
| Never had sigmoidoscopy or colonoscopy (≥ 50 yrs) | 44.4 | 35.2 | 51.9 | 69.4 |
| No mammogram in past 2 years (women ≥ 40 yrs) | 21.9 | 14.6 | 24.1 | 39.7 |



Health Care Coverage

In 2001, an estimated 14.6% of the U.S. population had no health care coverage; this was a 3% rise in people without health insurance since 2000.¹ The increase in lack of coverage is due to a reduction in the number and percentage of people covered by employment-based health insurance.¹

In the 2002 BRFs, an estimated 13.8% of Michigan adults aged 18-64 had no health care coverage. Young adults (18-24 years) were more likely to be without health care insurance than the older age groups. Adults 65 years and older are eligible for health care insurance through the Medicare program and so were not included in the analysis. A higher proportion of African Americans were without health insurance than Caucasians (19.7% vs. 11.0%). The prevalence of no health care coverage was inversely related to education and income.

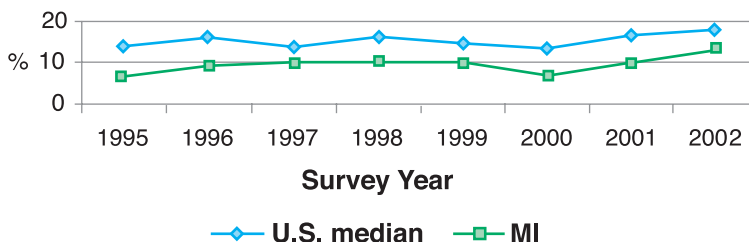
Almost 17% (16.9 ± 1.3%) of respondents said they did not have a personal doctor or health care provider. Five percent (5.3 ± 0.8%) reported that there had been a time in the past 12 months when they needed medical care but could not get it.

No Health Care Coverage Among Adults Aged 18-64 2002 Michigan BRFs (% ± 95% confidence intervals)

| Demographic Characteristics | No Health Care Coverage ^a |
|-----------------------------|--------------------------------------|
| Total | 13.8 ± 1.3 |
| Age | |
| 18-24 years | 25.3 ± 4.9 |
| 25-34 years | 15.2 ± 3.0 |
| 35-44 years | 11.4 ± 2.4 |
| 45-54 years | 10.5 ± 2.2 |
| 55-64 years | 8.8 ± 2.4 |
| Gender | |
| Male | 14.5 ± 2.1 |
| Female | 13.0 ± 1.7 |
| Race | |
| White | 11.9 ± 1.4 |
| Black | 19.7 ± 4.7 |
| Education | |
| < High school | 32.1 ± 7.0 |
| High school grad | 18.9 ± 2.8 |
| Some college | 11.7 ± 2.2 |
| College grad | 6.4 ± 1.7 |
| Household Income | |
| < \$20,000 | 36.7 ± 5.7 |
| \$20,000 - 34,999 | 22.6 ± 3.6 |
| \$35,000 - 49,999 | 9.2 ± 2.6 |
| \$50,000 - 74,999 | 7.0 ± 2.3 |
| ≥ \$75,000 | 2.6 ± 1.3 |

^aProportion of respondents aged 18-64 who reported they did not have any kind of health care coverage.

**No Health Care Coverage
Among Adults Ages 18 and Older
U.S. vs. Michigan, 1995-2002**



“Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?”

Health Status

Health Status 2002 Michigan BRFs (% ± 95% confidence intervals)

| Demographic Characteristics | General Health Fair or Poor ^a |
|-----------------------------|--|
| Total | 13.5 ± 1.1 |
| Age | |
| 18-24 years | 8.6 ± 3.0 |
| 25-34 years | 5.8 ± 2.0 |
| 35-44 years | 9.9 ± 2.2 |
| 45-54 years | 13.7 ± 2.4 |
| 55-64 years | 17.7 ± 3.1 |
| 65-74 years | 22.6 ± 4.0 |
| ≥ 75 years | 32.5 ± 5.1 |
| Gender | |
| Male | 12.1 ± 1.6 |
| Female | 14.9 ± 1.5 |
| Race | |
| White | 12.5 ± 1.1 |
| Black | 19.3 ± 4.2 |
| Education | |
| < High school | 33.7 ± 5.1 |
| High school grad | 16.1 ± 2.1 |
| Some college | 12.3 ± 1.9 |
| College grad | 5.3 ± 1.2 |
| Household Income | |
| < \$20,000 | 32.3 ± 4.3 |
| \$20,000 - 34,999 | 16.8 ± 2.5 |
| \$35,000 - 49,999 | 9.7 ± 2.4 |
| \$50,000 - 74,999 | 7.0 ± 2.0 |
| ≥ \$75,000 | 5.1 ± 1.5 |

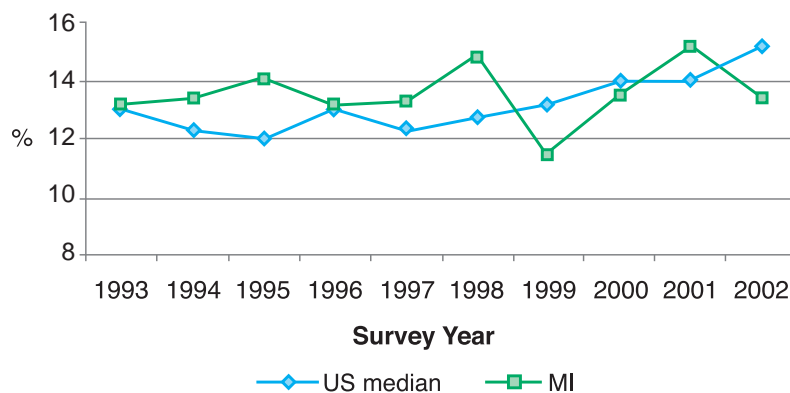
^aProportion of respondents who said their health, in general, was fair or poor.

Population-based health surveys frequently include a question asking respondents to rate their overall health as excellent, very good, good, fair, or poor. Such self-ratings of fair or poor health status have been linked to morbidity and mortality.^{2,3} Self-reported poor health functioning has also been associated with lower socioeconomic status in the presence or absence of disease.⁴

An estimated 13.5% of Michigan adults in 2002 perceived their general health status to be fair or poor. The proportion of respondents in fair or poor health decreased with education and income levels, but increased with age from 35 years and older. African Americans were more likely than Caucasians to report their health status as fair or poor (African Americans, 19.3% vs. Caucasians, 12.5%).

“Would you say that in general your health is . . . excellent, very good, good, fair, or poor?”

General Health: Fair or Poor
U.S. vs. Michigan, 1993-2002





Fruit & Vegetable Consumption

The National Cancer Institute's 5 A Day for Better Health Program promotes the daily consumption of five or more servings of fruits and vegetables to reduce the risk of cancer and diseases such as heart disease, hypertension, diabetes, and macular degeneration.⁵

The 2002 BRFs asked how often people ate fruits and vegetables. Respondents said that on average they consumed fruit and juice 1.5 times/day and vegetables 2.2 times/day, for a total fruit and vegetable consumption of 3.7 times/day.

The estimated proportion of Michigan adults ($77.4 \pm 1.4\%$) who do not consume fruit and vegetable five or more times a day has remained virtually unchanged since 2000 ($77.2 \pm 1.8\%$) (see graph below). Inadequate consumption of fruits and vegetables decreased with age and was more prevalent among men (82.2%) than women (72.9%). Although college graduates were less likely to report not meeting the recommended daily intake of fruits and vegetables compared with other education groups, household income did not appear to have an effect on consumption.

Fruit and Vegetable Consumption 2002 Michigan BRFs

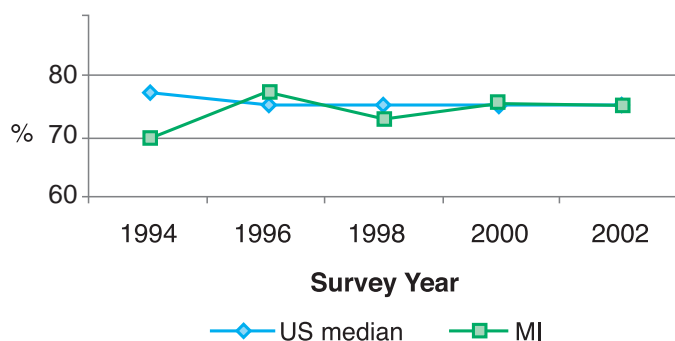
(% \pm 95% confidence intervals)

| Demographic Characteristics | Fruits & Vegetables (< 5 times/day) ^a |
|-----------------------------|--|
| Total | 77.4 \pm 1.4 |
| Age | |
| 18-24 years | 81.9 \pm 4.5 |
| 25-34 years | 83.1 \pm 3.0 |
| 35-44 years | 78.8 \pm 2.9 |
| 45-54 years | 78.4 \pm 2.8 |
| 55-64 years | 74.9 \pm 3.5 |
| 65-74 years | 69.6 \pm 4.4 |
| \geq 75 years | 62.2 \pm 5.3 |
| Gender | |
| Male | 82.2 \pm 2.0 |
| Female | 72.9 \pm 1.8 |
| Race | |
| White | 77.7 \pm 1.4 |
| Black | 77.3 \pm 4.7 |
| Education | |
| < High school | 79.6 \pm 4.4 |
| High school grad | 81.3 \pm 2.3 |
| Some college | 78.1 \pm 2.5 |
| College grad | 71.9 \pm 2.6 |
| Household Income | |
| < \$20,000 | 77.3 \pm 4.1 |
| \$20,000 - 34,999 | 80.3 \pm 2.8 |
| \$35,000 - 49,999 | 77.4 \pm 3.2 |
| \$50,000 - 74,999 | 78.2 \pm 3.2 |
| \geq \$75,000 | 76.0 \pm 3.0 |

^aProportion of respondents whose total reported consumption of fruits (including juice) and vegetables was less than five times per day.

Inadequate Consumption of Fruits and Vegetables (< 5 times/day)

U.S. vs. Michigan, 1994-2002



Cardiovascular Disease

Cardiovascular Disease Prevalence Among Respondents 35 Years and Older 2002 Michigan BRFS (% ± 95% confidence intervals)

| Demographic Characteristics | Ever Told Had Heart Attack or Myocardial Infarction ^a | Ever Told Had Angina or Coronary Heart Disease ^b | Ever Told Had Stroke ^c |
|-----------------------------|--|---|-----------------------------------|
| Total | 7.2 ± 1.0 | 7.1 ± 0.9 | 3.9 ± 0.7 |
| Age | | | |
| 35-44 years | 1.5 ± 1.0 | 1.6 ± 1.0 | 1.5 ± 0.8 |
| 45-54 years | 3.5 ± 1.4 | 3.9 ± 1.5 | 1.6 ± 1.0 |
| 55-64 years | 8.6 ± 2.4 | 10.8 ± 2.7 | 4.7 ± 1.8 |
| 65-74 years | 15.1 ± 3.4 | 15.7 ± 3.5 | 6.7 ± 2.4 |
| ≥ 75 years | 20.7 ± 4.5 | 14.9 ± 3.8 | 11.6 ± 3.6 |
| Gender | | | |
| Male | 9.9 ± 1.7 | 8.8 ± 1.5 | 3.9 ± 1.1 |
| Female | 4.7 ± 1.0 | 5.5 ± 1.1 | 3.9 ± 0.9 |
| Race | | | |
| White | 7.0 ± 1.0 | 7.2 ± 1.0 | 3.6 ± 0.7 |
| Black | 7.8 ± 3.6 | 7.5 ± 3.8 | 5.6 ± 3.1 |
| Education | | | |
| < High school | 18.9 ± 4.7 | 13.2 ± 4.0 | 6.7 ± 3.2 |
| High school grad | 6.9 ± 1.7 | 7.0 ± 1.6 | 3.4 ± 1.1 |
| Some college | 7.4 ± 1.9 | 7.8 ± 1.9 | 4.7 ± 1.6 |
| College grad | 3.0 ± 1.0 | 4.3 ± 1.3 | 2.6 ± 1.0 |
| Household Income | | | |
| < \$20,000 | 12.9 ± 3.3 | 12.8 ± 3.3 | 7.0 ± 2.7 |
| \$20,000 - 34,999 | 11.6 ± 2.5 | 11.1 ± 2.6 | 5.9 ± 1.9 |
| \$35,000 - 49,999 | 4.4 ± 2.0 | 4.2 ± 1.7 | 4.1 ± 2.0 |
| \$50,000 - 74,999 | 3.9 ± 2.0 | 4.2 ± 1.8 | 2.4 ± 1.5 |
| ≥ \$75,000 | 2.9 ± 1.4 | 4.1 ± 1.6 | 0.6 ± 0.5 |

Proportion of respondents 35 years and older who had ever been told by a doctor that ^athey had a heart attack or myocardial infarction; ^bthey had angina or coronary heart disease; ^cthey had a stroke.

Diseases of the heart was the leading cause of death in 2001, but the death rate had dropped slightly from 2000 (-3.8% change).⁶ Cardiovascular disease includes a number of different diseases of the heart: hypertensive heart, ischemic heart, cardiomyopathy, heart failure, dysrhythmias, plus other heart diseases, as well as cerebrovascular diseases such as stroke.

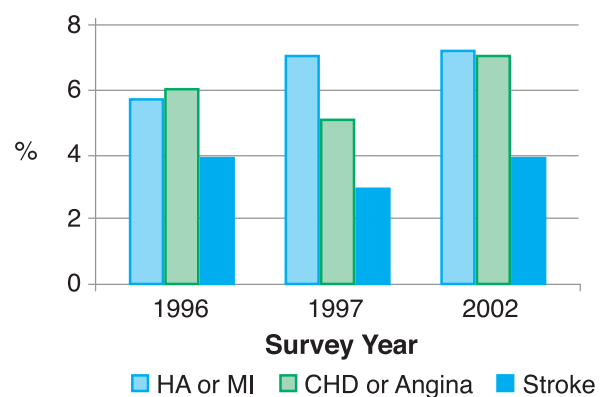
According to the 2002 BRFS, an estimated 7.2% of Michigan adults aged 35 years and older had ever had a heart attack (HA) or myocardial infarction (MI); 7.1% were told they had had angina or coronary heart disease (CHD); and 3.9% had been told they had a stroke. HA or MI and angina or CHD were more prevalent among men than women and all three increased with age.

The following pages include several risk factors linked with cardiovascular disease: overweight and obesity, physical inactivity, diabetes, and smoking.

“Has a doctor ever told you that you had a . . .

- Heart attack or myocardial infarction?
- Angina or coronary heart disease?
- Stroke?”

Cardiovascular Disease Among Michigan Adults 35 Years and Older





Diabetes

Diabetes mellitus was the sixth leading cause of death in 2001 in the United States and in Michigan.^{6,7}

Based on the 2002 BRFs, an estimated 8.1% of Michigan adults were told by a doctor that they have diabetes. Diabetes increased with age and was more prevalent among African Americans than Caucasians. A higher proportion of adults reporting diabetes was found at the lower education and income levels.

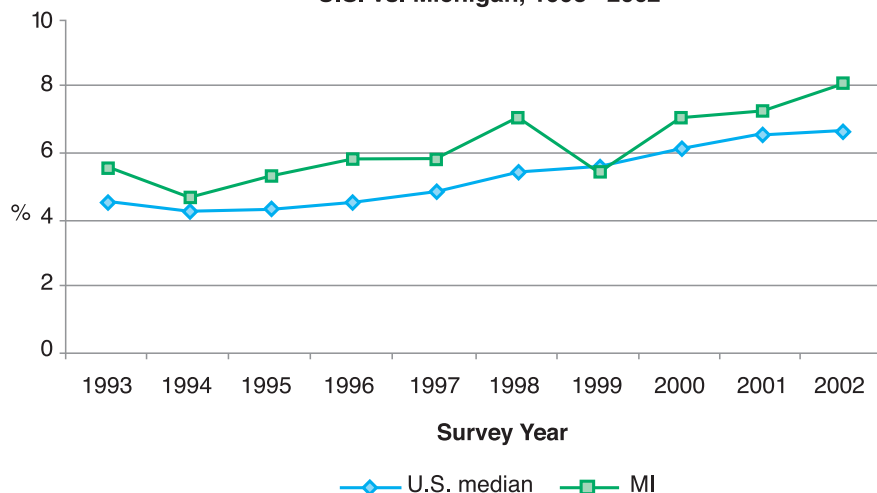
Looking at the BRFs prevalence estimates in the graph below, there has been an increase in diabetes in Michigan over this time period. Over the same time period, the prevalence of obesity, a risk factor for diabetes, has also been increasing.⁸ Among Michigan adults whose body mass index is greater than 30, the occurrence of diabetes is estimated to be almost double that of the general population ($15.7 \pm 2.3\%$).

Diabetes
2002 Michigan BRFs
(% \pm 95% confidence intervals)

| Demographic Characteristics | Ever Told Have Diabetes ^a |
|-----------------------------|--------------------------------------|
| Total | 8.1 \pm 0.8 |
| Age | |
| 18-24 years | 2.0 \pm 1.5 |
| 25-34 years | 1.0 \pm 0.7 |
| 35-44 years | 3.8 \pm 1.3 |
| 45-54 years | 8.5 \pm 1.9 |
| 55-64 years | 14.3 \pm 2.9 |
| 65-74 years | 20.1 \pm 4.0 |
| \geq 75 years | 22.2 \pm 4.7 |
| Gender | |
| Male | 7.9 \pm 1.2 |
| Female | 8.2 \pm 1.2 |
| Race | |
| White | 7.5 \pm 0.9 |
| Black | 11.3 \pm 3.1 |
| Education | |
| < High school | 16.7 \pm 4.0 |
| High school grad | 7.9 \pm 1.5 |
| Some college | 8.3 \pm 1.5 |
| College grad | 5.0 \pm 1.1 |
| Household Income | |
| < \$20,000 | 13.3 \pm 2.8 |
| \$20,000 - 34,999 | 10.3 \pm 2.0 |
| \$35,000 - 49,999 | 7.1 \pm 1.9 |
| \$50,000 - 74,999 | 5.1 \pm 1.7 |
| \geq \$75,000 | 4.3 \pm 1.4 |

^aProportion of respondents who reported that they had ever been told by a doctor that they had diabetes (gestational diabetes excluded).

Ever Told Have Diabetes
U.S. vs. Michigan, 1993–2002



“Have you ever been told by a doctor that you have diabetes?”

Leisure-time Physical Activity

Leisure-Time Physical Inactivity^a

2002 Michigan BRFs

(% ± 95% confidence intervals)

| Demographic Characteristics | No Activity ^a |
|-----------------------------|--------------------------|
| Total | 24.3 ± 1.4 |
| Age | |
| 18-24 years | 22.8 ± 4.8 |
| 25-34 years | 20.2 ± 3.3 |
| 35-44 years | 20.0 ± 2.9 |
| 45-54 years | 24.7 ± 3.1 |
| 55-64 years | 25.1 ± 3.5 |
| 65-74 years | 27.4 ± 4.2 |
| ≥ 75 years | 41.9 ± 5.3 |
| Gender | |
| Male | 21.6 ± 2.1 |
| Female | 26.8 ± 1.9 |
| Race | |
| White | 22.7 ± 1.5 |
| Black | 32.2 ± 5.0 |
| Education | |
| < High school | 44.9 ± 5.4 |
| High school grad | 33.7 ± 2.8 |
| Some college | 20.0 ± 2.4 |
| College grad | 11.4 ± 1.8 |
| Household Income | |
| < \$20,000 | 36.9 ± 4.5 |
| \$20,000 - 34,999 | 34.3 ± 3.4 |
| \$35,000 - 49,999 | 22.8 ± 3.4 |
| \$50,000 - 74,999 | 15.6 ± 2.7 |
| ≥ \$75,000 | 10.9 ± 2.3 |

^aProportion of respondents who said they did not participate in any physical activities or exercises (such as, running, golf, or walking for exercise) in their leisure time within the last month.

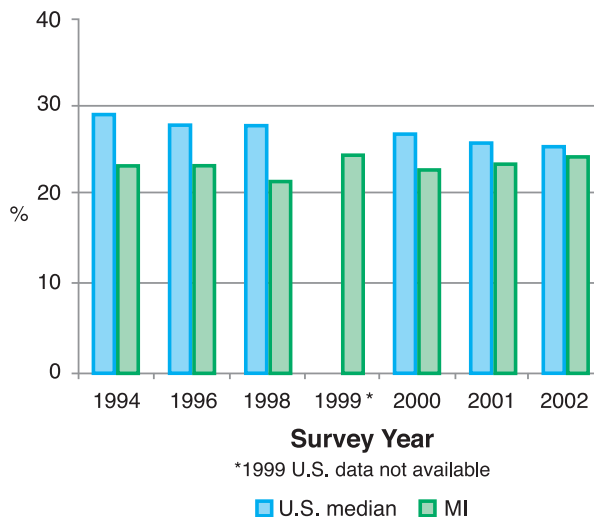
“During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?”

Regular physical activity has been shown to reduce the risk for premature mortality as well as for a number of chronic diseases, such as cardiovascular disease, some cancers, hypertension, and type II diabetes.⁹ Even small amounts of exercise can have beneficial health effects.

The BRFs asks one question about physical activity during leisure time, and from this the proportion of adults who are not active can be determined.

It was estimated that in the 2002 BRFs, 24.3% of Michigan adults were not physically active during the time they were not working in the previous month. A greater proportion of women than men and of African Americans than Caucasians reported that they had not participated in any leisure-time physical activity in the past month. Inactivity during leisure time decreased with higher education and income levels.

No Leisure-Time Physical Activity U.S. vs. Michigan, 1994-2002



Occupational Physical Activity

Measuring only sports-related or leisure-time exercise without consideration of occupational physical activity may underestimate the accumulated daily level of physical activity.¹⁰

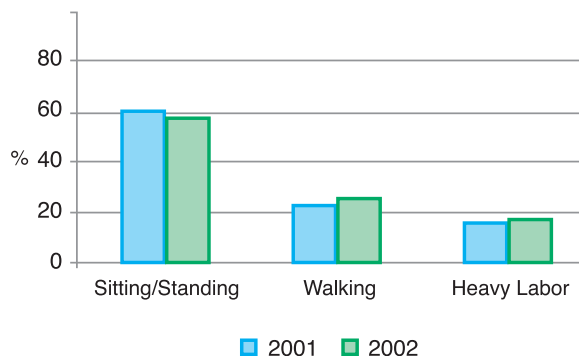
In the 2002 BRFs, an estimated 41.8% of currently employed Michigan adults had jobs that involved mostly walking, heavy labor, or physical work, while 58.2% had jobs at which they mostly sat or stood. A higher proportion of women than men and of whites than blacks reported that their jobs involved mostly sitting or standing. Higher education and income levels coincided with more sedentary type of work, whereas respondents whose employment was described as heavy labor reported lower education and income levels.

Occupational Physical Activity^a Among Currently Employed Adults 2002 Michigan BRFs (% ± 95% confidence intervals)

| Demographic Characteristics | Mostly Sitting or Standing | Mostly Walking | Mostly Heavy Labor or Physical Work |
|-----------------------------|----------------------------|----------------|-------------------------------------|
| Total | 58.2 ± 2.1 | 24.4 ± 1.8 | 17.4 ± 1.7 |
| Age | | | |
| 18-24 years | 47.2 ± 7.2 | 33.2 ± 6.7 | 19.6 ± 5.6 |
| 25-34 years | 55.9 ± 4.6 | 24.7 ± 3.9 | 19.4 ± 3.9 |
| 35-44 years | 56.3 ± 3.9 | 23.9 ± 3.4 | 19.8 ± 3.2 |
| 45-54 years | 64.9 ± 3.8 | 21.7 ± 3.3 | 13.5 ± 2.9 |
| 55-64 years | 62.4 ± 5.9 | 22.5 ± 5.1 | 15.0 ± 4.6 |
| ≥ 65 years | 76.4 ± 9.2 | 16.0 ± 7.5 | 7.6 ± 6.2 |
| Gender | | | |
| Male | 54.6 ± 3.1 | 21.2 ± 2.5 | 24.2 ± 2.7 |
| Female | 62.3 ± 2.8 | 28.1 ± 2.6 | 9.6 ± 1.8 |
| Race | | | |
| White | 59.2 ± 2.3 | 23.6 ± 1.9 | 17.3 ± 1.8 |
| Black | 51.1 ± 7.3 | 28.7 ± 6.4 | 20.3 ± 6.3 |
| Education | | | |
| < High school | 43.5 ± 9.8 | 29.6 ± 9.0 | 27.0 ± 8.5 |
| High school grad | 43.5 ± 4.0 | 27.1 ± 3.6 | 29.4 ± 3.8 |
| Some college | 58.3 ± 3.8 | 24.6 ± 3.3 | 17.2 ± 2.9 |
| College grad | 73.0 ± 3.1 | 21.2 ± 2.8 | 5.8 ± 1.7 |
| Household Income | | | |
| < \$20,000 | 47.1 ± 8.9 | 29.8 ± 8.1 | 23.1 ± 7.5 |
| \$20,000 - 34,999 | 50.3 ± 5.0 | 25.1 ± 4.2 | 24.7 ± 4.6 |
| \$35,000 - 49,999 | 49.7 ± 4.9 | 25.4 ± 4.3 | 24.9 ± 4.4 |
| \$50,000 - 74,999 | 54.6 ± 4.6 | 28.9 ± 4.3 | 16.5 ± 3.6 |
| ≥ \$75,000 | 73.3 ± 3.5 | 19.2 ± 3.1 | 7.5 ± 2.2 |

^aResponse to the question, "When you are at work, which of the following best describes what you do? Would you say mostly sitting or standing, mostly walking, or mostly heavy labor or physically demanding work?"

Occupational Physical Activity Among Currently Employed Michigan Adults



"When you are at work, which of the following best describes what you do?"

- Mostly sitting or standing
- Mostly walking
- Mostly heavy labor or physically demanding work"

Weight Status

Weight Status^a 2002 Michigan BRFS (% ± 95% confidence intervals)

| Demographic Characteristics | Obese | Overweight |
|-----------------------------|------------|------------|
| Total | 25.2 ± 1.4 | 36.9 ± 1.6 |
| Age | | |
| 18-24 years | 12.9 ± 3.8 | 28.1 ± 5.2 |
| 25-34 years | 23.5 ± 3.5 | 35.1 ± 4.1 |
| 35-44 years | 25.2 ± 3.1 | 37.3 ± 3.5 |
| 45-54 years | 31.5 ± 3.4 | 38.9 ± 3.5 |
| 55-64 years | 31.5 ± 3.9 | 41.4 ± 4.1 |
| 65-74 years | 29.9 ± 4.4 | 39.8 ± 4.6 |
| ≥ 75 years | 19.6 ± 4.5 | 39.2 ± 5.3 |
| Gender | | |
| Male | 25.0 ± 2.1 | 44.6 ± 2.5 |
| Female | 25.5 ± 1.9 | 29.4 ± 1.9 |
| Race | | |
| White | 23.7 ± 1.5 | 36.9 ± 1.7 |
| Black | 34.5 ± 5.2 | 39.6 ± 5.5 |
| Education | | |
| < High school | 29.3 ± 4.9 | 36.7 ± 5.4 |
| High school grad | 29.0 ± 2.7 | 35.2 ± 2.9 |
| Some college | 27.6 ± 2.7 | 35.3 ± 2.9 |
| College grad | 17.5 ± 2.2 | 40.4 ± 2.9 |
| Household Income | | |
| < \$20,000 | 30.4 ± 4.4 | 32.1 ± 4.5 |
| \$20,000 - 34,999 | 29.6 ± 3.3 | 33.5 ± 3.4 |
| \$35,000 - 49,999 | 24.3 ± 3.5 | 41.0 ± 4.0 |
| \$50,000 - 74,999 | 22.9 ± 3.3 | 40.7 ± 4.0 |
| ≥ \$75,000 | 23.4 ± 3.1 | 38.3 ± 3.5 |

^aPrevalence estimates for weight status were based on body mass index (BMI) as calculated from the self-reported weight and height measurements. BMI is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)²]. Weight status categories: obese, BMI ≥ 30; overweight, BMI 25.0-29.9. Pregnant women were excluded from this analysis.

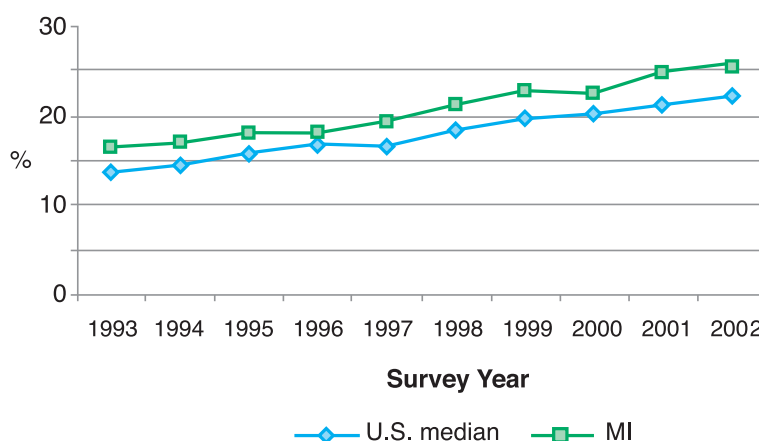
Overweight and obese adults are at an increased risk for premature mortality¹¹ and for developing chronic diseases such as heart disease, diabetes, hypertension, cancer, stroke, and gallstones.^{12,13}

Overweight is defined as having a body mass index (BMI) between 25.0 and 29.9; an obese weight status is a BMI ≥ 30. BMI is defined as weight in kilograms divided by height in meters squared (w/h²) and was calculated from the self-reported height and weight measurements of Michigan residents participating in the 2002 BRFS.

According to the 2002 Michigan BRFS, one-quarter of the Michigan adult population (25.2%) was estimated to be obese and 36.9% were overweight. Similar proportions of men and women were obese, but men were more likely to be overweight than women (44.6% vs. 29.4%). Despite an estimated 62% of Michigan adults with a BMI of ≥ 25, only 16.7% of the population had ever been advised by a physician to lose weight.

Obesity

U.S. vs. Michigan, 1993 - 2002





Smoking

As the leading cause of preventable deaths in the United States, smoking was responsible for 440,000 premature deaths annually between 1995 and 1999.¹⁴

In Michigan, smoking prevalence has remained relatively stable over the past decade (see graph below). It was estimated that 24.1% of Michigan adults were current smokers in 2002. The prevalence of current smoking was inversely related to age and to education and income levels. Among current smokers, 59.2 ± 3.4% had tried to quit smoking for at least one day in the past year.

To achieve the Healthy People goal of a cigarette smoking prevalence of 12% by 2010,¹⁵ the proportion of current smokers in Michigan will need to drop by about 1.5 percentage points a year.

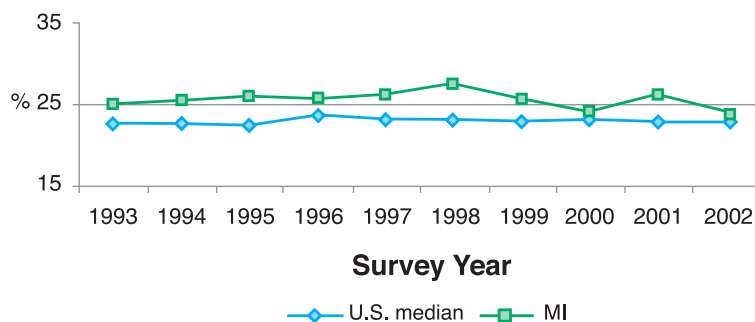
Cigarette Smoking Status 2002 Michigan BRFs

(% ± 95% confidence intervals)

| Demographic Characteristics | Current Smoker ^a |
|-----------------------------|-----------------------------|
| Total | 24.1 ± 1.4 |
| Age | |
| 18-24 years | 31.7 ± 5.3 |
| 25-34 years | 26.3 ± 3.6 |
| 35-44 years | 30.7 ± 3.3 |
| 45-54 years | 25.7 ± 3.1 |
| 55-64 years | 21.0 ± 3.4 |
| 65-74 years | 11.6 ± 2.9 |
| ≥ 75 years | 4.6 ± 2.1 |
| Gender | |
| Male | 25.4 ± 2.2 |
| Female | 23.0 ± 1.8 |
| Race | |
| White | 23.9 ± 1.5 |
| Black | 25.3 ± 4.8 |
| Education | |
| < High school | 34.8 ± 5.4 |
| High school grad | 31.4 ± 2.8 |
| Some college | 24.6 ± 2.6 |
| College grad | 12.2 ± 1.9 |
| Household Income | |
| < \$20,000 | 34.7 ± 4.6 |
| \$20,000 - 34,999 | 30.1 ± 3.3 |
| \$35,000 - 49,999 | 25.2 ± 3.5 |
| \$50,000 - 74,999 | 22.9 ± 3.4 |
| ≥ \$75,000 | 15.8 ± 2.7 |

^aProportion of respondents who reported that they had ever smoked at least 100 cigarettes in their life and that they smoke cigarettes now.

Current Cigarette Smoking U.S. vs. Michigan, 1993–2002



Oral Health

Oral Health 2002 Michigan BRFSS (% ± 95% confidence intervals)

| Demographic Characteristics | No Dental Visit in Past Year ^a | No Teeth Cleaning in Past Year ^b |
|-----------------------------|---|---|
| Total | 23.9 ± 1.4 | 23.9 ± 1.5 |
| Age | | |
| 18-24 years | 25.2 ± 4.8 | 27.2 ± 5.0 |
| 25-34 years | 24.5 ± 3.5 | 27.4 ± 3.6 |
| 35-44 years | 23.1 ± 3.0 | 24.2 ± 3.1 |
| 45-54 years | 21.6 ± 3.0 | 22.3 ± 3.1 |
| 55-64 years | 20.5 ± 3.4 | 16.3 ± 3.2 |
| 65-74 years | 26.4 ± 4.2 | 21.3 ± 4.1 |
| ≥ 75 years | 29.8 ± 5.1 | 26.4 ± 5.2 |
| Gender | | |
| Male | 24.7 ± 2.2 | 25.6 ± 2.3 |
| Female | 23.1 ± 1.8 | 22.3 ± 1.8 |
| Race | | |
| White | 21.4 ± 1.5 | 21.5 ± 1.5 |
| Black | 35.1 ± 5.2 | 34.5 ± 5.4 |
| Education | | |
| < High school | 48.8 ± 5.4 | 47.6 ± 6.1 |
| High school grad | 28.2 ± 2.6 | 29.0 ± 2.8 |
| Some college | 21.1 ± 2.5 | 20.7 ± 2.5 |
| College grad | 13.6 ± 2.1 | 15.5 ± 2.2 |
| Household Income | | |
| < \$20,000 | 47.6 ± 4.7 | 48.1 ± 5.2 |
| \$20,000 - 34,999 | 31.0 ± 3.3 | 32.3 ± 3.5 |
| \$35,000 - 49,999 | 20.9 ± 3.2 | 21.0 ± 3.3 |
| \$50,000 - 74,999 | 15.9 ± 2.9 | 17.0 ± 3.1 |
| ≥ \$75,000 | 11.0 ± 2.4 | 11.2 ± 2.4 |

Proportion of respondents who reported that. . .

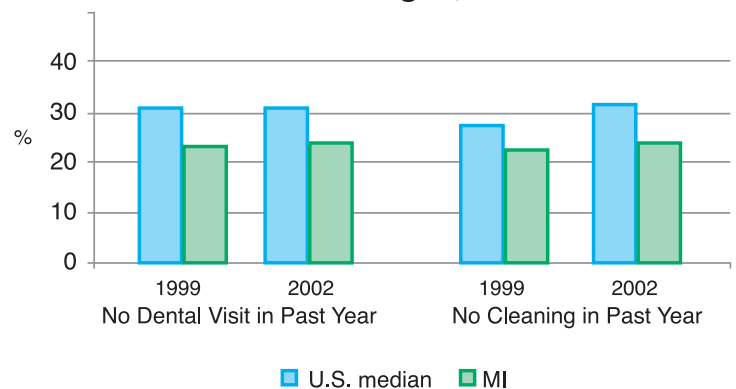
^athey had not visited a dentist or dental clinic for any reason in the previous year.

^bthey did not have their teeth cleaned by a dentist or dental hygienist in the previous year.

Oral health can be considered an indicator of one's general well-being.¹⁶ Regular dental care permits early diagnosis and treatment as well as preventive dental services.¹⁷ Previous surveys have shown that the proportion of the U.S. population that makes at least one annual dental visit varies significantly by age, race, and levels of education and income.¹⁸

In 2002, an estimated 23.9% of Michigan adults reported that they did not have a dental visit in the previous year. African Americans were more likely not to have had a dental visit (35.1% vs. 21.4%) or a dental cleaning (34.5% vs. 21.5%) in the past year than Caucasians. Non-use of dental services was more prevalent at lower education and income levels.

Oral Health Indicators U.S. vs. Michigan, 1999-2002





Immunizations

A Healthy People objective is to increase the proportion of adults aged 65 years and older who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease to 90% by 2010.¹⁹ A one-time pneumonia shot and annual flu shots can help prevent pneumonia and influenza, which together cause more than 21,400 deaths among persons 65 years and older annually.²⁰

According to the 2002 Michigan BRFs, 67.8% of adults aged 65 years and older were immunized against influenza in the past year and 63.1% had ever received a shot for pneumococcal disease. The prevalence of ever having had a shot to protect against pneumonia was higher among whites than blacks (65.6% vs. 45.7%). Since 1995 the prevalence of immunization in Michigan among adults 65 and older has increased 20.2% for influenza and 58.9% for pneumococcal disease.

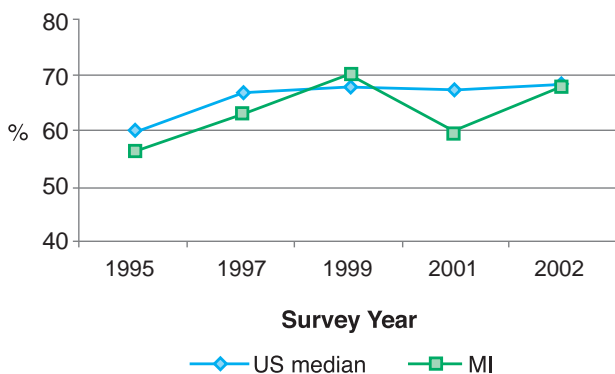
Immunizations Among Adults 65 Years and Older 2002 Michigan BRFs (% ± 95% confidence intervals)

| Demographic Characteristics | Had Flu Shot in Past Year ^a | Ever Had Pneumonia Shot ^b |
|-----------------------------|--|--------------------------------------|
| Total | 67.8 ± 3.3 | 63.1 ± 3.4 |
| Gender | | |
| Male | 66.5 ± 5.4 | 60.1 ± 5.6 |
| Female | 68.7 ± 4.2 | 65.1 ± 4.3 |
| Race | | |
| White | 68.9 ± 3.4 | 65.6 ± 3.5 |
| Black | 66.2 ± 13.0 | 45.7 ± 13.5 |
| Education | | |
| < High school | 63.7 ± 8.2 | 57.9 ± 8.4 |
| High school grad | 68.3 ± 5.2 | 62.4 ± 5.5 |
| Some college | 69.4 ± 6.5 | 67.8 ± 6.6 |
| College grad | 70.3 ± 7.4 | 65.4 ± 7.7 |

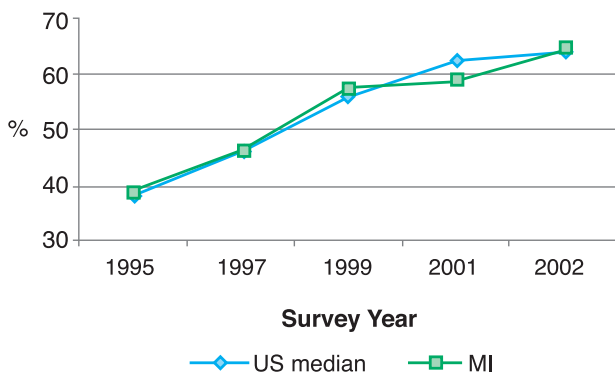
^aProportion of respondents 65 years and older who reported that they had had a flu shot in the past year.

^bProportion of respondents who reported that they ever had a pneumonia vaccination.

**Had Flu Shot in Past Year
Among Adults 65 Years and Older
U.S. vs. Michigan**



**Ever Had Pneumococcal Shot
Among Adults 65 Years and Older
U.S. vs. Michigan**



“During the past 12 months,
have you had a flu shot?”

“Have you ever had a
pneumonia shot?”

Asthma

Asthma 2002 Michigan BRFs (% ± 95% confidence intervals)

| Demographic Characteristics | Ever Told Have Asthma ^a | Still Have Asthma ^b |
|-----------------------------|------------------------------------|--------------------------------|
| Total | 13.0 ± 1.1 | 8.8 ± 0.9 |
| Age | | |
| 18-24 years | 17.3 ± 4.0 | 9.8 ± 3.2 |
| 25-34 years | 13.4 ± 2.8 | 8.2 ± 2.2 |
| 35-44 years | 11.8 ± 2.2 | 8.0 ± 1.9 |
| 45-54 years | 11.9 ± 2.4 | 9.2 ± 2.2 |
| 55-64 years | 14.2 ± 3.0 | 10.1 ± 2.6 |
| 65-74 years | 11.1 ± 3.0 | 8.9 ± 2.8 |
| ≥ 75 years | 11.4 ± 3.4 | 8.0 ± 2.9 |
| Gender | | |
| Male | 11.7 ± 1.6 | 7.2 ± 1.4 |
| Female | 14.1 ± 1.5 | 10.2 ± 1.3 |
| Race | | |
| White | 12.9 ± 1.2 | 8.8 ± 1.0 |
| Black | 13.8 ± 3.7 | 9.1 ± 3.1 |
| Education | | |
| < High school | 15.4 ± 4.0 | 11.6 ± 3.6 |
| High school grad | 13.0 ± 2.0 | 8.9 ± 1.6 |
| Some college | 13.5 ± 2.1 | 9.3 ± 1.8 |
| College grad | 11.7 ± 1.9 | 7.3 ± 1.5 |
| Household Income | | |
| < \$20,000 | 14.6 ± 3.2 | 9.9 ± 2.5 |
| \$20,000 - 34,999 | 14.3 ± 2.6 | 10.8 ± 2.4 |
| \$35,000 - 49,999 | 11.3 ± 2.4 | 7.7 ± 2.1 |
| \$50,000 - 74,999 | 12.3 ± 2.6 | 6.7 ± 1.9 |
| ≥ \$75,000 | 12.4 ± 2.4 | 8.8 ± 2.1 |

^aProportion of respondents who reported that they had ever been told by a doctor that they had asthma.

^bProportion of respondents who reported that they still have asthma.

According to the CDC, in 2001 31.3 million people in the United States were estimated to have ever been diagnosed with asthma and 20.3 million people reported that they still had asthma.²¹ The BRFs provides the only state-based surveillance data on asthma.

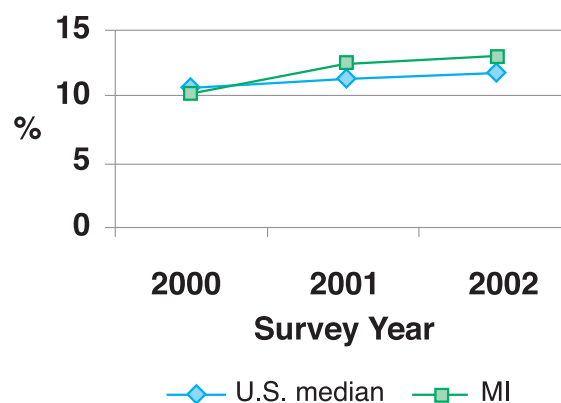
In 2002, the BRFs estimated that 13.0% of Michigan adults had ever been told by a health professional that they had asthma. Women were more likely to have ever been told that they had asthma than men (14.1% vs. 11.7%). An estimated 8.8% of Michigan adults currently have asthma. Again, a higher proportion of women reported that they still have asthma (10.2% vs. 7.2%). The prevalence of current asthma was higher among respondents with less than a high school education compared with those who said they were college graduates (11.6% vs. 7.3%).

Of those respondents with current asthma, an estimated 53.6 ± 5.6% stated they had had an asthma attack in the past 12 months and 71.7 ± 5.1% reported that in the previous 30 days they were taking asthma medication prescribed or given to them by a doctor.

"Have you ever been told by a doctor, nurse, or other health professional that you had asthma?"

"Have you ever been told by a doctor that you still have asthma?"

Ever Told Have Asthma
U.S. vs. Michigan



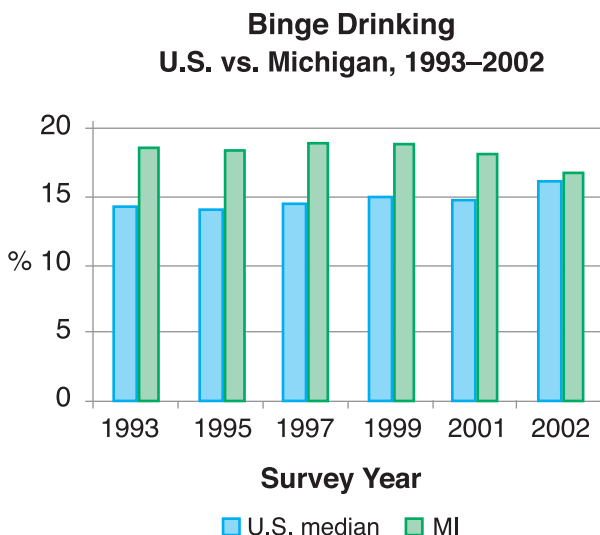
Alcohol Abuse

Alcohol abuse has been associated not only with serious health problems, such as cirrhosis of the liver, heart disease, cancer, and pancreatitis, but also with problems of violence and injury.²²

The measure of heavy drinking was modified this year to account for recent research showing gender differences in the absorption and metabolism of alcohol and also in alcohol-related outcomes.²³ Because they metabolize alcohol less efficiently than men, women may be at risk for alcohol-related problems if they drink more than seven drinks per week or more than three drinks per occasion. Men who drink more than 14 drinks per week or more than four drinks per occasion increase their risk for alcohol-related health and trauma events.²² In Michigan, an estimated $5.9 \pm 0.8\%$ of adults met the new definition of heavy drinking (i.e., in the past month men who consumed more than two drinks per day and women who imbibed more than one drink per day).

Binge drinking is the consumption of five or more alcoholic drinks on one occasion in the past month. Binge drinking has been declining since 1999 (see graph), and is more prevalent among men than women (24.5% vs. 9.7%) and among Caucasians than African Americans (17.7% vs. 11.5%).

The tendency to drink heavily or binge drink decreases with age.



Alcohol Abuse 2002 Michigan BRFs (% \pm 95% confidence intervals)

| Demographic Characteristics | Heavy Drinking ^a | Binge Drinking ^b |
|-----------------------------|-----------------------------|-----------------------------|
| Total | 5.9 \pm 0.8 | 16.8 \pm 1.3 |
| Age | | |
| 18-24 years | 10.2 \pm 3.7 | 31.1 \pm 5.3 |
| 25-34 years | 6.5 \pm 2.1 | 25.7 \pm 3.5 |
| 35-44 years | 6.9 \pm 1.9 | 18.8 \pm 2.8 |
| 45-54 years | 5.8 \pm 1.5 | 14.4 \pm 2.5 |
| 55-64 years | 3.6 \pm 1.3 | 7.8 \pm 2.3 |
| 65-74 years | 2.2 \pm 1.2 | 3.7 \pm 1.7 |
| \geq 75 years | 2.3 \pm 1.8 | 1.5 \pm 1.2 |
| Gender | | |
| Male | 6.9 \pm 1.4 | 24.5 \pm 2.2 |
| Female | 4.9 \pm 1.0 | 9.7 \pm 1.3 |
| Race | | |
| White | 6.1 \pm 0.9 | 17.7 \pm 1.4 |
| Black | 3.9 \pm 2.0 | 11.5 \pm 3.4 |
| Education | | |
| < High school | 5.8 \pm 2.9 | 15.6 \pm 4.3 |
| High school grad | 6.6 \pm 1.5 | 16.3 \pm 2.2 |
| Some college | 6.0 \pm 1.5 | 18.1 \pm 2.5 |
| College grad | 5.0 \pm 1.4 | 16.4 \pm 2.4 |
| Household Income | | |
| < \$20,000 | 6.0 \pm 2.3 | 16.3 \pm 3.8 |
| \$20,000 - 34,999 | 5.2 \pm 1.7 | 15.2 \pm 2.6 |
| \$35,000 - 49,999 | 7.0 \pm 2.1 | 19.0 \pm 3.2 |
| \$50,000 - 74,999 | 6.4 \pm 2.2 | 18.6 \pm 3.2 |
| \geq \$75,000 | 6.1 \pm 1.8 | 19.6 \pm 3.0 |

Proportion of respondents who reported . . .

^aconsuming on average more than two alcoholic beverages per day (men) or more than one alcoholic beverage per day (women) in the past month.

^bconsuming five or more drinks per occasion at least once in the previous month.

HIV Testing

HIV Testing Among Adults 18-64 Years 2002 Michigan BRFs (% \pm 95% confidence intervals)

| Demographic Characteristics | Ever Tested for HIV ^a | Tested for HIV in Past 2 Years ^b |
|-----------------------------|----------------------------------|---|
| Total | 44.6 \pm 1.8 | 46.6 \pm 3.2 |
| Age | | |
| 18-24 years | 42.8 \pm 5.6 | 71.9 \pm 8.0 |
| 25-34 years | 66.0 \pm 3.8 | 45.6 \pm 5.4 |
| 35-44 years | 52.2 \pm 3.5 | 32.5 \pm 5.6 |
| 45-54 years | 31.9 \pm 3.3 | 43.1 \pm 7.8 |
| 55-64 years | 20.9 \pm 3.3 | 54.6 \pm 11.0 |
| Gender | | |
| Male | 41.9 \pm 2.8 | 48.9 \pm 5.1 |
| Female | 47.3 \pm 2.4 | 44.5 \pm 4.0 |
| Race | | |
| White | 41.5 \pm 1.9 | 41.7 \pm 3.5 |
| Black | 62.8 \pm 5.6 | 62.8 \pm 7.9 |
| Education | | |
| < High school | 44.6 \pm 7.2 | 69.4 \pm 11.7 |
| High school grad | 41.6 \pm 3.3 | 49.5 \pm 6.2 |
| Some college | 47.9 \pm 3.3 | 44.5 \pm 5.5 |
| College grad | 44.2 \pm 3.1 | 41.0 \pm 5.4 |
| Household Income | | |
| < \$20,000 | 46.0 \pm 5.8 | 56.1 \pm 9.7 |
| \$20,000 - 34,999 | 49.2 \pm 4.2 | 48.3 \pm 7.1 |
| \$35,000 - 49,999 | 45.5 \pm 4.3 | 38.8 \pm 7.0 |
| \$50,000 - 74,999 | 43.7 \pm 4.1 | 43.0 \pm 7.3 |
| \geq \$75,000 | 45.2 \pm 3.6 | 44.5 \pm 6.3 |

^aReported 'yes' to the question, "As far as you know, have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation." "Don't know" (2.4 \pm 0.5%) was considered a valid response.

^bProportion of those ever tested for HIV who said they were tested within the past 2 years.

An estimated 40,000 new HIV infections in the United States have occurred annually since the early 1990s.²⁴ Early awareness of an HIV infection can prevent further spread of the disease. The new CDC HIV initiative recommends that all health-care providers include HIV testing as part of routine medical care.²⁴

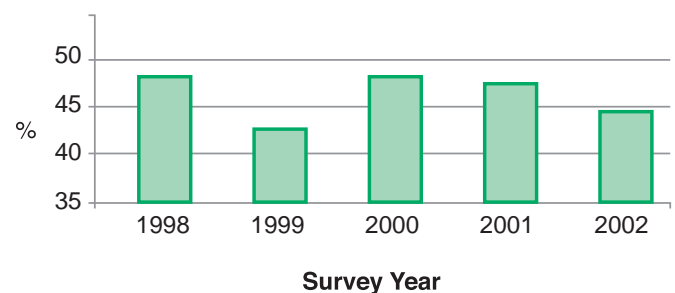
It was estimated from the 2002 Michigan BRFs data that 44.6% of Michigan adults had ever been tested for HIV, apart from blood donations. Having ever been tested was more prevalent among adults younger than 45 years of age compared with those over 45. Women were more likely to report that they had ever had an HIV test than men (47.3% vs. 41.9%), as were African Americans compared with Caucasians (62.8% vs. 41.5%).

Of those who had ever been tested for HIV, 46.6% were tested within the previous two years.

In 2002, the Michigan BRFs asked respondents who had ever had an HIV test the main reason for being tested. Thirty-two percent (32.0 \pm 2.6%) indicated the HIV test was part of their routine medical check-up.

"Have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation."

Ever Tested for HIV
Michigan, 1998-2002





Colorectal Cancer Screening

In 2001, colorectal cancer was the second leading cause of cancer-related deaths in the United States.⁶ Fecal occult blood (FOB) tests, sigmoidoscopy, and colonoscopy are screening procedures that are performed for the early detection of colorectal cancer. Because age is a known risk factor for colorectal cancer, screening is recommended for average-risk individuals 50 years and older.²⁵

An estimated $53.6 \pm 2.4\%$ of Michigan adults aged 50 years and older had ever had an FOB test using a home kit; 35.2% had had the test within the past 2 years. Adults between 50 and 59 years were less likely to have had the FOB test than those 60 and older.

More than half of Michigan adults 50 and older were estimated to have ever had a sigmoidoscopy or colonoscopy ($55.6 \pm 2.4\%$), with 45.2% having had either of these procedures within the past 5 years.

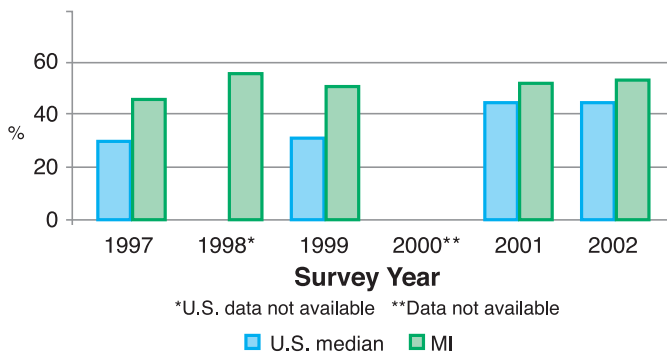
**Colorectal Cancer Screening
Among Adults Aged 50 Years and Older
2002 Michigan BRFs**
(% \pm 95% confidence intervals)

| Demographic Characteristics | Had Blood Stool Test in Past 2 Years ^a | Had Sigmoidoscopy or Colonoscopy in Past 5 Years ^b |
|-----------------------------|---|---|
| Total | 35.1 \pm 2.3 | 45.2 \pm 2.4 |
| Age | | |
| 50-59 years | 30.8 \pm 3.4 | 36.2 \pm 3.5 |
| 60-69 years | 38.7 \pm 4.4 | 51.5 \pm 4.5 |
| \geq 70 years | 38.1 \pm 4.0 | 52.6 \pm 4.2 |
| Gender | | |
| Male | 34.6 \pm 3.5 | 45.7 \pm 3.7 |
| Female | 35.5 \pm 3.0 | 44.8 \pm 3.1 |
| Race | | |
| White | 35.3 \pm 2.4 | 45.1 \pm 2.5 |
| Black | 34.2 \pm 8.6 | 49.3 \pm 9.2 |
| Education | | |
| < High school | 28.8 \pm 6.1 | 38.9 \pm 6.7 |
| High school grad | 34.2 \pm 3.7 | 44.6 \pm 4.0 |
| Some college | 38.4 \pm 4.5 | 44.7 \pm 4.5 |
| College grad | 36.7 \pm 4.4 | 50.5 \pm 4.5 |
| Household Income | | |
| < \$20,000 | 30.4 \pm 5.3 | 35.5 \pm 5.7 |
| \$20,000 - 34,999 | 36.8 \pm 4.6 | 49.3 \pm 4.8 |
| \$35,000 - 49,999 | 38.3 \pm 5.9 | 46.5 \pm 6.1 |
| \$50,000 - 74,999 | 33.4 \pm 6.2 | 39.6 \pm 6.3 |
| \geq \$75,000 | 36.2 \pm 6.0 | 46.8 \pm 6.1 |

^aProportion of respondents who had a blood stool test within the last 2 years using a home kit.

^bProportion of respondents who had a sigmoidoscopy or colonoscopy within the past 5 years.

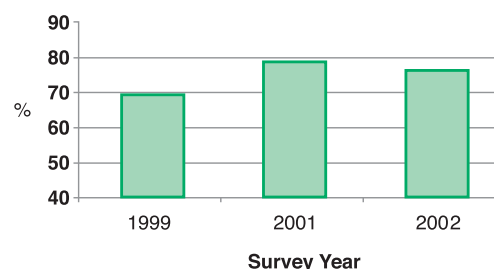
**Ever Had a Blood Stool Test
Using a Home Kit
U.S. vs. Michigan, 1997-2002**



Prostate Cancer Screening

Prostate cancer screening has become a common component of a routine medical check-up for American men of average risk 50 years and older and for younger men at an increased risk for prostate cancer. The prostate-specific antigen (PSA) blood test or the digital rectal (DR) exam are screening tests that can detect prostate cancer in its early stages. However, owing to lack of randomized trial evidence, controversy remains as to whether early detection through screening actually improves health outcomes.^{26,27,28}

**Ever Had a PSA Test
Among Michigan Men 50 Years and Older**



From the 2002 BRFs data, an estimated 84.9% of Michigan men 50 years and older had ever had a DR exam, and 75.4% had ever had a PSA test. A higher proportion of men 60 years and older had a DR exam in the past year compared with men aged 50-59. Men at higher education and income levels were more likely to have had a DR exam in the past year than men at lower levels. The likelihood of having a PSA test within the previous year was greater in the ≥ 70 age group than among those between 50 and 59 and was also greater among men with higher education.

It was estimated that $6.7 \pm 1.8\%$ of men 50 and older in Michigan had been diagnosed with prostate cancer. These men were excluded from the screening data.

Prostate Cancer Screening Among Men Aged 50 Years and Older^a
2002 Michigan BRFs
(% \pm 95% confidence intervals)

| Demographic Characteristics | Ever Had DR Exam ^b | Had DR Exam in Past Year | Ever Had PSA Test ^c | Had PSA Test in Past Year |
|-----------------------------|-------------------------------|--------------------------|--------------------------------|---------------------------|
| Total | 84.9 \pm 2.9 | 54.3 \pm 3.8 | 75.4 \pm 3.3 | 54.8 \pm 3.8 |
| Age | | | | |
| 50-59 years | 80.7 \pm 4.7 | 47.5 \pm 5.7 | 70.6 \pm 5.2 | 49.4 \pm 5.8 |
| 60-69 years | 86.9 \pm 4.6 | 60.6 \pm 6.8 | 75.4 \pm 6.2 | 55.1 \pm 7.1 |
| ≥ 70 years | 91.0 \pm 4.4 | 60.6 \pm 7.1 | 84.1 \pm 5.4 | 64.6 \pm 7.0 |
| Race | | | | |
| White | 86.1 \pm 2.9 | 54.3 \pm 4.0 | 75.7 \pm 3.4 | 55.1 \pm 4.0 |
| Black | 81.6 \pm 12.6* | 59.8 \pm 15.8* | 76.0 \pm 13.4 | 60.2 \pm 15.6* |
| Education | | | | |
| High school grad or less | 78.9 \pm 5.0 | 48.1 \pm 5.9 | 72.1 \pm 5.3 | 47.8 \pm 6.0 |
| Some college or grad | 89.1 \pm 3.4 | 58.3 \pm 4.9 | 77.6 \pm 4.2 | 59.4 \pm 4.9 |
| Household Income | | | | |
| < \$35,000 | 77.2 \pm 5.5 | 44.2 \pm 6.3 | 70.7 \pm 5.9 | 49.4 \pm 6.4 |
| \geq \$35,000 | 87.8 \pm 3.6 | 57.6 \pm 5.1 | 76.5 \pm 4.4 | 57.5 \pm 5.1 |

^aMen who had been diagnosed with prostate cancer ($6.7 \pm 1.8\%$) were excluded.

^bReported 'yes' to the question, "A digital rectal exam is an exam in which a doctor, nurse, or other health professional places a gloved finger into the rectum to feel the size, shape, and hardness of the prostate gland. Have you ever had a digital rectal exam?"

^cReported 'yes' to the question, "A prostate-specific antigen test, also called a PSA test, is a blood test used to check men for prostate cancer. Have you ever had a PSA test?"

*Estimates may be unstable where sample sizes are < 50.



Cervical Cancer Screening

The last 40 years have seen a significant decline in the incidence of invasive cervical cancer, owing in large part to cervical cancer screening.²⁹ However, in 2003, an estimated 12,200 new cases will be diagnosed and 4,100 women will die from cervical cancer in the United States.²³ Current guidelines for cervical cancer screening recommend that Pap testing should begin annually with the onset of sexual activity or at age 18. Once three or more annual tests have been normal, at the discretion of the physician Pap tests can be performed less frequently.³⁰

From the Michigan 2002 BRFs, an estimated $96.3 \pm 1.0\%$ of women 18 years and older had ever had a Pap test. Approximately 15% of women had not had a Pap test in the past 3 years. This proportion tended to rise after the age of 60. Women at lower education and income levels were more likely than those at the higher levels not to have had a Pap test in the previous 3 years.

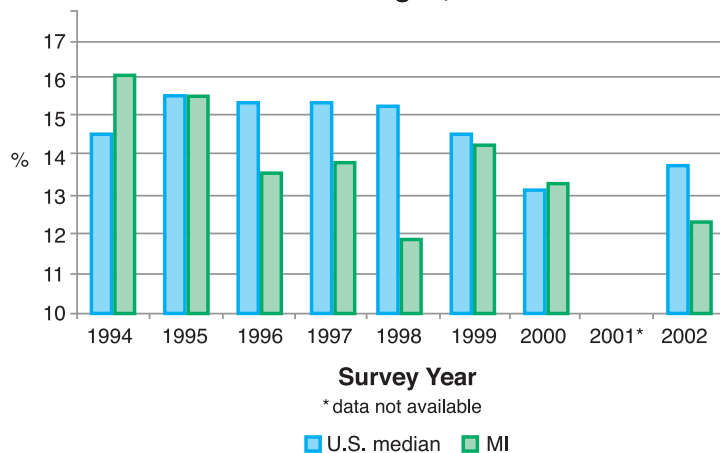
Cervical Cancer Screening 2002 Michigan BRFs

(% \pm 95% confidence intervals)

| Demographic Characteristics | Pap Test in Past 3 Years ^a |
|-----------------------------|---------------------------------------|
| Total | 14.8 \pm 1.5 |
| Age | |
| 18-29 years | 12.0 \pm 4.0 |
| 30-39 years | 7.5 \pm 2.5 |
| 40-49 years | 9.5 \pm 2.8 |
| 50-59 years | 12.3 \pm 3.1 |
| 60-69 years | 20.6 \pm 5.0 |
| \geq 70 years | 35.6 \pm 5.3 |
| Race | |
| White | 14.9 \pm 1.7 |
| Black | 10.6 \pm 4.0 |
| Education | |
| < High school | 26.3 \pm 6.9 |
| High school grad | 18.6 \pm 3.0 |
| Some college | 13.4 \pm 2.5 |
| College grad | 7.8 \pm 2.1 |
| Household Income | |
| < \$20,000 | 27.0 \pm 5.0 |
| \$20,000 - 34,999 | 14.0 \pm 3.1 |
| \$35,000 - 49,999 | 14.8 \pm 4.1 |
| \$50,000 - 74,999 | 9.6 \pm 3.4 |
| \geq \$75,000 | 5.1 \pm 2.1 |

^aProportion of female respondents 18 years and older who did not have a Pap test within the previous 3 years.

**No Pap Test Within Last 3 Years
Among Women 18 Years and Older
U.S. vs. Michigan, 1994-2002**



“How long has it been since
your last Pap smear?”

Breast Cancer Screening

Breast Cancer Screening Among Women 40 Years and Older 2002 Michigan BRFS (% \pm 95% confidence intervals)

| Demographic Characteristics | No Clinical Breast Exam and Mammogram in Past Year ^a |
|-----------------------------|---|
| Total | 45.8 \pm 2.5 |
| Age | |
| 40-49 years | 49.6 \pm 4.5 |
| 50-64 years | 39.5 \pm 4.1 |
| \geq 65 years | 48.5 \pm 4.6 |
| Race | |
| White | 44.4 \pm 2.7 |
| Black | 51.5 \pm 9.0 |
| Education | |
| < High school | 63.5 \pm 8.0 |
| High school grad | 46.0 \pm 4.2 |
| Some college | 44.6 \pm 4.5 |
| College grad | 37.7 \pm 4.9 |
| Household Income | |
| < \$20,000 | 58.4 \pm 6.2 |
| \$20,000 - 34,999 | 43.6 \pm 5.5 |
| \$35,000 - 49,999 | 43.5 \pm 6.6 |
| \$50,000 - 74,999 | 41.0 \pm 6.4 |
| \geq \$75,000 | 39.3 \pm 6.3 |

^aProportion of female respondents 40 years and older who did not have both a clinical breast exam and mammogram in the previous year.

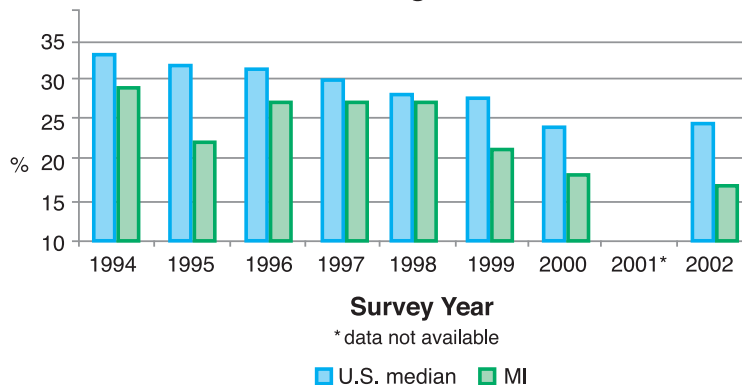
Breast cancer is the second leading cause of cancer deaths among American women.³¹ Mammography can detect breast cancer at an early stage, often before a lump can be felt. Women between the ages of 20 and 39 should have a clinical or physical breast exam by a health professional every 3 years, whereas women 40 years and older are recommended to have both a mammogram and a clinical breast exam (CBE) annually.³¹

The 2002 Michigan BRFS estimates that 77.4 \pm 1.8% of women had an appropriately timed CBE (i.e., women 20-39 years who had a CBE in the previous 3 years and women 40 and older who had a CBE within the previous year). Approximately 38% (38.1 \pm 2.5%) of women 40 and older had not had a mammogram within the previous year. Almost 46% (45.8%) of female respondents 40 and older had not had both a CBE and a mammogram in the past year. The lowest proportion who did not meet the breast cancer screening recommendations was among women aged 50-64 (39.5%). This proportion tended to decline with increasing education and household income levels.

“How long has it been since you had your last mammogram?”

“How long has it been since your last clinical breast exam?”

No Mammogram Within Last 2 Years
Among Women 40 Years and Older
U.S. vs. Michigan, 1994-2002





Firearms

Deaths from firearm-related injuries were the second leading cause of injury mortality in the United States in 1997.³² Gunshots accounted for 32,436 deaths and 64,207 non-fatal injuries in 1997.

The 2002 Michigan BRFs included questions about firearms at home to determine the risk for firearm-related injury. The analysis determined what proportion of respondents (i) had a loaded, unlocked firearm at home; (ii) had a firearm that was loaded and locked, unloaded, or the status of the gun was unknown; or (iii) did not have a gun in the home. An estimated 3.3% of respondents indicated that they kept a loaded, unlocked gun at home. More men than women were likely to report having a loaded, unlocked gun (5.6% vs. 1.2%).

The proportion of respondents who had a gun in or around their home that was loaded and locked, unloaded, or the status of the gun was unknown was $37.2 \pm 1.6\%$. Having a firearm at home in any one of these three conditions was more prevalent among white than black residents ($41.1 \pm 1.7\%$ vs. $16.9 \pm 4.2\%$), among the 18-34 age group ($32.2 \pm 3.2\%$ vs. 35-54 years, $40.0 \pm 2.5\%$ and vs. ≥ 55 years, $39.1 \pm 2.6\%$), among men ($41.8 \pm 2.5\%$ vs. women, $33.1 \pm 2.0\%$), and at a higher household income level ($\geq \$35,000$, $43.8 \pm 2.2\%$ vs. $< \$35,000$, $29.9 \pm 2.6\%$).

Approximately 60% of Michigan households did not keep firearms around the home.

Firearms in the Home
2002 Michigan BRFs
 (% \pm 95% confidence intervals)

| Demographic Characteristics | Have Loaded | |
|-----------------------------|---------------------------|--------------------------|
| | Unlocked Gun ^a | Have No Gun ^b |
| Total | 3.3 \pm 0.6 | 59.5 \pm 1.6 |
| Age | | |
| 18-34 years | 2.5 \pm 1.0 | 65.3 \pm 3.2 |
| 35-54 years | 3.8 \pm 1.0 | 56.3 \pm 2.5 |
| ≥ 55 years | 3.3 \pm 1.0 | 57.6 \pm 2.7 |
| Gender | | |
| Male | 5.6 \pm 1.1 | 52.6 \pm 2.5 |
| Female | 1.2 \pm 0.4 | 65.8 \pm 2.0 |
| Race | | |
| White | 3.2 \pm 0.6 | 55.8 \pm 1.7 |
| Black | 4.7 \pm 2.1 | 78.4 \pm 4.5 |
| Education | | |
| High school grad or less | 2.6 \pm 0.8 | 59.0 \pm 2.5 |
| Some college or grad | 3.8 \pm 0.8 | 59.8 \pm 2.1 |
| Household Income | | |
| $< \$35,000$ | 2.9 \pm 0.9 | 67.3 \pm 2.6 |
| $\geq \$35,000$ | 3.6 \pm 0.8 | 52.7 \pm 2.2 |

^aProportion of respondents who reported that they had a loaded, unlocked gun at home.

^bProportion of respondents who reported that they had no gun at home.

“Are any firearms kept in or around your home?”

“Are any of these firearms now loaded?”

“Are any of these firearms also unlocked?”

BRFSS Methods

The national Behavioral Risk Factor Surveillance System (BRFSS) consists of annual surveys conducted independently by the states; Washington, DC; and U.S. territories and is coordinated through a cooperative agreement with the Centers for Disease Control and Prevention (CDC). The annual Michigan surveys follow the overall CDC telephone survey protocol for the BRFSS. The 2002 Michigan Behavioral Risk Factor Survey (BRFS) data were collected quarterly by the Institute for Public Policy and Social Research at Michigan State University. The sample of telephone numbers was selected using a list-assisted, random-digit-dialed methodology with disproportionate stratification based on geographic area (Kent County, Midland County, rest of Michigan), phone bank density, and listedness.

The 2002 Michigan BRFS data were weighted to adjust for the probabilities of selection (based on the probability of telephone number selection, the number of adults in the household, and the number of residential phone lines) and a post-stratification weighting factor that adjusted estimates (using 2000 Census Michigan population distributions) by sex, age, and race. Calculations of the prevalence estimates and confidence interval limits were performed using SUDAAN, a statistical computing program that was designed for analyzing data from multistage sample surveys.³³

Unless otherwise specified, respondents who answered that they did not know or refused to answer were not included in the calculation of estimates.

For comparison purposes, the median of estimates from participating states and territories is used for the national estimates.

SAMPLE RESULTS

A total of 53,900 telephone numbers were used for the 2002 Michigan BRFS. The final call dispositions for the sample numbers fell into the following categories: 5934 completed and partially completed interviews; 2863 non-interviews of eligible respondents; 11,954 non-interviews of unknown eligibility; and 33,149 numbers were not eligible.

The CASRO (Council of American Survey Research Organizations) response rate, which includes a portion of the dispositions with unknown eligibility in the denominator of the rate, was 43.4%. Of all household contacts, 51.6% resulted in a completed interview.



- ¹Mills R. 2002. Health Insurance Coverage: 2001. U.S. Census Bureau, U.S. Department of Commerce, Economics, and Statistics Administration. www.census.gov/hhes/hlthins/hlthin01/hlth01asc.html. (Access date June 18, 2003).
- ²Meurer LN, PM Layde, and CE Guse. 2001. Self-rated health status: A new vital sign for primary care? *WMJ* 100(7): 35-39.
- ³Sundquist J and SE Johansson. 1997. Self reported poor health and low educational level predictors for mortality: a population based follow up study of 39,156 people in Sweden. *J Epidemiol Community Health* 51(1): 35-40.
- ⁴Hemingway H, A Nicholson, and M Marmot. 1997. The impact of socioeconomic status on health functioning as assessed by the SF-36 questionnaire: The Whitehall Study. *Am J Public Health* 87: 1484-1490.
- ⁵National Cancer Institute (NCI). 2003. 5 A Day For Better Health program evaluation report: introduction.dccps.nci.nih.gov/5ad_1_intro.html. (Access date June 30, 2003.)
- ⁶Arias E and BL Smith. 2003. Deaths: Preliminary data for 2001. *National Vital Statistics Report* 51(5). www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_05.pdf (Access date July 2, 2003.)
- ⁷Michigan Department of Community Health. 2003. 2001 Michigan Resident Death File. Vital Records and Health Data Development Section, Michigan Department of Community Health. www.mdch.state.mi.us/pha/osr/CHI/Deaths/frame.asp. (Access date July 25, 2003.)
- ⁸Mokdad AH, MK Serdula, WH Dietz, et al. 2000. The continuing epidemic of obesity in the United States. *JAMA* 284: 1650-1651.
- ⁹National Center for Chronic Disease Prevention and Health Promotion, CDC. Physical Activity and Health. Summary. www.cdc.gov/nccdphp/sgr/summ.htm.
- ¹⁰Macera C, D Jones, S Ham, et al. 2000. Physical activity surveillance in the 21st century. *Ann Epidemiol* 10(7):456.
- ¹¹Peeters A, JJ Barendregt, et al. 2003. Obesity in adulthood and its consequences for life expectancy: a life-table analysis. *Ann Intern Med* 138: 24-32.
- ¹²Field AE, EH Coakley, et al. 2001. Impact of overweight on the risk of developing common chronic diseases during a 10-year period. *Arch Intern Med* 161: 1581-1586.
- ¹³Calle EE, C Rodriguez, et al. 2003. Overweight, obesity and mortality from cancer in a prospectively studied cohort of U.S. adults. *N Engl J Med* 348(17): 1625-1638.
- ¹⁴Fellows JL, A Trosclair, et al. 2002. Annual smoking-attributable mortality, years of potential life lost, and economic costs – United States, 1995-1999. *MMWR* 51(14):300-303.
- ¹⁵Healthy People 2010. 2000. Tobacco use. Office of Disease Prevention, U.S. Department of Health and Human Services. www.healthypeople.gov/Document/HTML/Volume2/27Tobacco.htm. (Access date July 10, 2003.)
- ¹⁶Davenport C, K Elley, et al. 2003. The clinical effectiveness and cost-effectiveness of routine dental checks: a systematic review and economic evaluation. *Health Technol Assess* 7(7):1-138.
- ¹⁷Janes GR, DK Blackman, JC Bolen, et al. 1999. Surveillance for use of preventive health-care services by older adults, 1995-1997. *MMWR* 48 (SS-8):51-88.
- ¹⁸Healthy People 2010. 2000. Oral Health. Office of Disease Prevention, U.S. Department of Health and Human Services. www.healthypeople.gov/Document/HTML/Volume2/21Oral.htm. (Access date July 10, 2003.)
- ¹⁹Healthy People 2010. 2000. Immunization and infectious diseases. Office of Disease Prevention, U.S. Department of Health and Human Services. www.healthypeople.gov/Document/HTML/Volume1/14Immunization.htm. (Access date July 14, 2003.)

(Continued on page 22)

(Continued from page 21)

- ²⁰MacNeil A, JA Singleton, and JS Moran. 2002. Influenza and pneumococcal vaccination levels among persons aged ≥ 65 years – United States, 2001. *MMWR* 51(45):1019-1024.
- ²¹Rhodes L, JE Moorman, et al. 2003. Self-reported asthma prevalence and control among adults – United States, 2001. *MMWR* 52(17):381-384.
- ²²Healthy People 2010. 2000. Substance abuse. www.healthypeople.gov/Document/HTML/Volume2/26Substance.htm. (Access date July 15, 2003.)
- ²³National Institute on Alcohol Abuse and Alcoholism. 1999. Are women more vulnerable to alcohol's effects? Alcohol Alert No. 46. www.niaaa.nih.gov/publications/aa46.htm. (Access date July 15, 2003.)
- ²⁴Janssen RS, IM Onorato, et al. 2003. Advancing HIV prevention: new strategies for a changing epidemic – United States, 2003. *MMWR* 52(15): 329-332.
- ²⁵Nadel MR, DK Blackman, et al. 2002. Are people being screened for colorectal cancer as recommended? Results from the National Health Interview Survey. *Prev Med* 35: 199-206.
- ²⁶Barry MJ. 2001. Prostate-specific antigen testing for early diagnosis of prostate cancer. *N Engl J Med* 344(18): 1373-1377.
- ²⁷U.S. Preventive Services Task Force. 2002. Screening for prostate cancer: recommendations and rationale. *Ann Inter Med* 137(11): 915-916.
- ²⁸Harris R and KN Lohr. 2002. Screening for prostate cancer: an update of the evidence for the U.S. Preventive Services Task Force. *Ann Inter Med* 137(11): 917-929.
- ²⁹Centers for Disease Control and Prevention. 2003. The National Breast and Cervical Cancer Early Detection Program – Reducing mortality through screening. Fact sheet. Division of Cancer Prevention and Control, CDC. www.cdc.gov/cancer/nbccedp/about.htm. (Access date July 21, 2003.)
- ³⁰Centers for Disease Control and Prevention. 2002. Cervical cancer and Pap test information. Division of Cancer Prevention and Control, CDC. www.cdc.gov/cancer/nbccedp/info-cc.htm.
- ³¹American Cancer Society. 2003. Cancer facts and figures 2003. American Cancer Society, Inc., Atlanta, GE. www.cancer.org/docroot/STT/stt_0.asp. (Access date July 22, 2003.)
- ³²Centers for Disease Control and Prevention. 1999. Nonfatal and fatal firearm-related injuries – United States, 1993-1997. *MMWR* 48(45): 1029-1034.
- ³³Research Triangle Institute. 2001. SUDAAN user's manual. Release 8.0. Vols. I & II. Research Triangle Institute, Research Triangle Park, NC.



Jennifer M. Granholm, Governor
Janet Olszewski, Director

Number of copies: 200
Total printing cost: \$2824.83
Price per unit: \$14.12

MDCH is an equal opportunity employer, services & program provider.